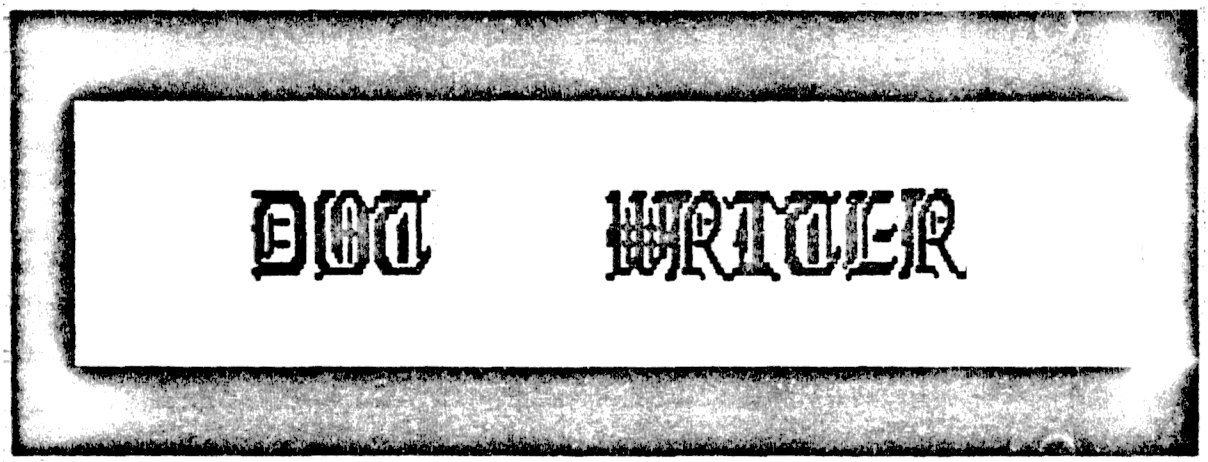
GEAP

GRAPHICS EDITOR AND PROGRAMMER



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JF CONSULTING

74355 BUTTONWOOD, PALM DESERT, CA. 92260 (714) 340-5471

GEAP DOT WRITER AND DOT PRINTER EXPANSION MODULE

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GEAP DOT WRITER INSTRUCTIONS

W 1.0 GEAP Dot Writer and Dot Printer Facilities

With the purchase of the Dot Writer, you will have at your command two new facilities, the GEAP Dot Writer high resolution editing package, and a program we introduced to you in section D1.0, called DOT PRINT. Dot Writer allows you to create high resolution graphic drawings or lettersets. The graphics can be drawn from Dot Writer but in the case of lettersets used in long documents such as this manual, it is best to create the document using your word processor, save the text in ASCII format and then print the text with Dot Printer.

GEAP is not a word processor, but a word processor which creates an ASCII file such as NewScript, can be used in conjunction with the Dot Printer Program. Any word processor which will generate an ASCII file can be used to create the text (following our format), however, we cannot directly support them. We strongly recommend the purchase of NewScript since it is an extremely well written processor with excellent documentation and unmatched features.

With all of this new power, where do you start? Section W2.0 instructs you in the use of the Dot Writer high resolution editor. The Dot Print scripting program is explained in section D1.0

BEFORE GOING ANY FARTHER --- MAKE A BACKUP OF THE DOT WRITER disks. Your GEAP DOT WRITER is delivered on a formatted diskette. If you are using a Model III, "CONVERT" the diskette. If you are a single drive owner, and you do not have a friend with 2 drives, send us a copy of your TRS-DOS, along with 2 blank diskettes (or 5 dollars), and we will gladly make the transfer for you. Those of you with very limited disk space should read the section on file management (section W1.3) to determine what configuration you want. You should "Write Protect" the original diskette before you make a backup.

W 1.1 NOTES ON OPERATING SYSTEMS (Disclaimer)

There is one primary reason that we have chosen TRSDOS as our operating system and that is because it rarely changes. By this we mean that Tandy provides a stable operating system. We try to maintain compatibility with most operating systems, however, if changes are made in these systems, we will not guarantee that GEAP or the DOT WRITER package will be compatible. The bottom line is that we maintain the right to withdraw support

from any operating system. If you choose to use an operating system other than TRSDOS we will do all we can to maintain compatibility but we will not guarantee that GEAP or DOT WRITER will remain compatible with any DOS other than TRSDOS. (TRSDOS is a trademark name of Tandy Corp.)

W 1.2 DOT WRITER and GEAP DISK FILES - How to organize them.

If you have limited disk space you may wish to divide the Dot Writer files among different diskettes. Dot Writer files are essentially divided into three categories:
1. Program code which allows editing or creating lettersets. (Dot Writer)
2. The print time module (Dot Print) which prints an ASCII file using Dot Writer Fonts or user created fonts, and
3. Dot Writer Library Files which consist of the Dot Writer character Fonts or user created drawings or lettersets.

For example if you were only interested in printing character fonts, you would only need to have the Dot Printer module and the Dot Writer Library files. If you were only interested in one particular font, you would need to have that font and the print time module.
The following disk files appear on your disk:
EXPMOD8 - Dot Writer editing program. (Loaded at the start of the session)
EXPMOD9 - Dot Writer editing program. (Called from within GEAP)
GTML - Machine language code for the above modules.
EXAMPLE/TXT - Example program used for instruction by the manual. This may be deleted from working disks.

DOTPRINT - The print time module which reads an ASCII file and prints using "dot commands". (Loaded from BASIC)
WPML/CIM - Machine language code for DOTPRINT program.
WP - BASIC code for DOTPRINT program.

DOTREAD - Basic program which will print a file created by the Dot Writer "output to disk" option. This program can be placed "alone" on any disk.

DOT WRITER LIBRARY FILES

Disk File Name	Character Font	Disk File Name	Character Font
BB	Bigbold	MP	Microprint
BO	Bold Enhanced	MP1	Microprint 1
MC	Minicubes	OE	Olde English
SE	Small Enhanced	MB	Medium Bold
MB2	Medium Bold (x2)	PL	Plain Epson
GR	Greek Letters	FF	Flat Faced

NOTE: DUE TO LIMITED DISK SPACE, MP1 AND FF ARE NOT INCLUDED IN VERSION 1.5C

W 1.3 Minimum Disk Configurations - Examples

To create lettersets only: The minimum configuration on the disk would be GEAP, EXPMOD8, EXPMOD9, AND GTML. If you wanted to edit the Olde English character font you would need the "OE" file on your diskette.

Minimal Print Time Disk configuration:

If you want to print a file using the DOTPRINT module, the programs you would need would be: DOTPRINT, WPML/CIM, WP, any of the library files you plan on using (i.e. if you wanted Olde English, the "OE" disk file would have to be on this disk) and the ASCII text file that you plan to print (this is the file you created with your word processor).

Configuration for Multiple Drives: Model I, Single Density

If you own multiple drives, the following configuration is suggested. You should format two diskettes. On one diskette put: GEAP, EXPMOD1, EXPMOD2, EXPMOD3, EXPMOD4, JOIN, GTML, SCRIPMOD, EXPMOD8, EXPMOD9, EXPMOD12. On the second diskette put your library of lettersets and the DOTPRINT program. The files on this disk should be DOTPRINT, WPML/CIM, WP, BB, BO, MC, SE, MP, PL, OE, and MB.

When editing or creating lettersets, you would use The first diskette since all of the editing commands would be present. If you wanted to edit one of the Dot Writer character fonts, you would insert disk number two. (If you wanted to load any of GEAP's other expansion modules, you would re-insert disk number 1).

When printing text files, use disk number two since the DOTPRINT program and the library of character fonts is on this disk. With three drives or with double density drives, you can have all of the files and the system disk on-line at all times.

W 2.0 INTRODUCTION TO GEAP DOT WRITER

GEAP DOT WRITER is written for the EPSON printer with Graftrax 80 or PLUS. It allows high resolution, bit-image graphics to be created, printed and stored.

Printers capable of printing bit-image graphics have been around for a long time but programming them with bit-image graphics is very tedious. This is where the GEAP DOT WRITER comes in. *We have designed a program that does all of the bit-image graphics programming for you.*

First, you draw letters or artwork using the TRS-80 screen as a sketchpad. When you are finished, the program converts the screen image into bit-image format, and stores it on disk. (With the DOT WRITER LETTERSETS, the above steps have already been done for you.) The resulting bit image graphics can be printed or stored to disk for printing at a later time.

GEAP Dot Writer has three uses. The first use is printing the DOT WRITER LETTERSETS. To do this, you type your text onto the screen -- the text appears on the screen as ordinary alphanumeric characters -- then you choose the letterset in which the text will appear on paper, and finally the text is printed by the EPSON, using the letterset you chose. (There are several alternatives you may select, such as reading the text from disk instead of typing it in, printing the lettersets in magnified form, printing them with black and white reversed, etc.)

The second use is creating your own lettersets or modifying some of DOT WRITER's characters. To do this, you should be familiar with GEAP's graphics-editing and drawing commands. These commands are discussed in the main manual.

The third use is creating High Resolution Graphics. This is similar to creating lettersets, but when designing large page layouts, you use a "building block" concept, and all of the blocks are fitted together at print time.

SUMMARY OF DOT WRITER COMMANDS

Note: All commands below are entered from Designate mode (cursor is flashing minus sign).

PRINT USING PREVIOUSLY CREATED LETTERSETS AND DRAWINGS

M.....Load letterset from disk into memory.

L.....Draw screen limit. The P command below only prints text to left of line drawn by this command.

P.....Print text. The text on the screen is written to printer or disk using the current letterset. Options include spaces between lines, spacing between letters, amount of magnification, reverse black and white and centering screen window on paper. (These options may be entered by hand or read from disk.)

COMMANDS FOR CREATING LETTERSETS AND DRAWINGS

F.....Draw frame. A frame is set up inside which the letters of the current letterset must be drawn. The first time the F command is used, the dimensions of the current letterset are entered. Note that a frame selection of 128x6 will give you the full screen to work on and NO MARGINS will be drawn.

A.....Alter limits. Sets up or changes limits for frame.

R.....Record letter or drawing in the frame to memory "workspace".

W.....Write letter or drawing. The letter or drawing currently on the screen or in memory "workspace" is printed with the Epson.

E.....Edit letter or drawing. The letter or drawing currently in the "workspace" is loaded to the screen for redrawing.

S.....Save the letter, which is currently on the screen or in memory workspace, to disk file.

T.....Transfer a letter or drawing from disk to screen. Transfers to memory workspace at the same time. This is used in editing a single letter.

H.....Help calculate disk storage requirements. Displays the amount of disk space that would be required to store various lettersets based on frame dimensions.

RELATED COMMANDS IN MAIN GEAP PROGRAM

UO.....Go to menu from which expansion modules are called; DOT WRITER can be loaded this way.
FG.....Save or load text from screen to disk or from disk to screen.

W 2.1 MEMORY CONSIDERATIONS

All GEAP commands except two can be used with DOT WRITER. The two are options 1 and 2 of the menu that is called by hitting the '9' key. These commands will appear to work, but if you look for a BASIC program segment written by either of these options, you won't find it. If you need option 1 or 2, use them before you select the DOT WRITER module.

W 2.2 LOADING DOT WRITER

There are two ways to load the DOT WRITER module. You can try them both and select the one you prefer.

The first way:
1. Press the reset button and then go to BASIC.
2. Enter RUN "EXPMOD8". The "EXPMOD8" program will automatically load both itself and the GEAP program.
3. After GEAP's flashing dot appears in the upper left corner, go to the Designate mode by pressing the '-' (minus) key. Next, hit the 'UO' keys at the same time and choose option 3 when the menu appears.

The second way:
1. Press the RESET button and go to BASIC.
2. When the MEMORY SIZE question appears, <ENTER> 53000, then <ENTER> RUN"GEAP".
3. When GEAP's flashing dot appears, go to the Designate mode by hitting the '-' (minus) key.
4. Press the 'UO' keys at the same time and choose option # 2 when the menu appears.

If you didn't set memory size correctly while using the second loading method, the computer will automatically set the correct memory size, reload GEAP and prompt you to repeat steps 3 and 4.

NewScript users:
1. Select GEAP from the primary NewScript menu.
2. You will then be prompted to enter GEAP or DOTPRINT. If you wish to load DOT WRITE, select menu option "0" for BASIC and then type RUN"EXPMOD8" <ENTER>.

When you have successfully loaded the DOT WRITER module, it will ask you the question, "READ PRINTER SETUP FROM DISK?" We will discuss the answer to this question in the next section.

W 2.3 PRINTING WITH THE DOT WRITER CHARACTER FONTS

Let's go through some examples of printing with the DOT WRITER character fonts. In the first examples, we shall let the computer do most of the work. Later we'll take control of the printing and formatting ourselves.

W 2.3A EXAMPLE 1: PRINTING A PREVIOUSLY CREATED FILE

1. The first question Dot Writer asks after it has been loaded is, "READ PRINTER SETUP FROM DISK?" For now answer 'N'.
2. Now the flashing minus sign will appear on the screen to indicate that you are in GEAP's Designate mode. Load a message from disk for the EPSON to print. Just follow these steps.
3. Hold down the 'FG' keys for a moment, taking care to press the 'G' key a little before the 'F' key. (The 'F' key alone is a different command.) When the options appear, choose option 2, LOAD DISK TO SCREEN. Enter the name EXAMPLE/TXT as the file you want to load. (We've included the file "EXAMPLE/TXT" on the GEAP disk.)
4. The computer will load the example text to the screen.
5. Hit the 'P' (for Print) key. The computer will ask you if you want to read the printer setup from disk. Answer 'Y'.
6. You will be asked for the name of the printer setup file. Choose the default file by hitting <ENTER>.
7. The computer will load the letterset specified by the setup file, and then it will ask you for the number of lines to print. Enter the number of lines of text you want printed. When the printer is ready, hit the <ENTER> again. The EPSON will then print the screen text using the letterset specified by the setup file.
8. After the text is printed, you will be asked if you want to return to the cold start setting. If you answer 'Y' the printer returns to its normal setting and the PAPER ADVANCES ONE LINE. If you answer 'N', the paper WILL NOT ADVANCE and the printer will remain at its current setting. You usually answer 'N' when you want to link drawings together, and 'Y' otherwise.

W 2.3B EXAMPLE 2: CREATING AND PRINTING TEXT ON THE SCREEN

Now let's do an example in which you enter the text yourself instead of reading it from disk.

1. If you just did example 1 above, restart the program by hitting <BREAK> and entering RUN.
2. This time answer yes to the question, "READ PRINTER SETUP FROM DISK". The computer will ask you for the name of the printer setup file. Choose the default file by hitting <ENTER>.
3. The computer will load the letterset specified by the setup file, and then it will draw a vertical line on the screen. This line marks the limit of the characters that will fit on paper for this particular printer set up.
4. Now type in a message to be printed. To do this, go to the Write mode by hitting the '*' key. The flashing minus sign will be replaced by a flashing asterisk. Type in a message taking care to stay to the left of the vertical line. (You might review the methods of moving the cursor around the screen described in section 2.2 of the GEAP manual.)
5. When you've got the message you want, exit from the Write mode by hitting the CLEAR key. Now enter the Designate mode by hitting the '-' key. Give the print text command by holding the 'P' key.
6. The computer will ask you if you want to read the printer set up from disk. Answer 'Y' and choose the default file again.
7. The computer will read the formatting options from disk, and ask you for the number of lines of text to print. Enter a number and when the printer is ready, hit the <ENTER> again. Your message will be printed by the EPSON using the current letterset. Finally, answer 'Y' to the cold start question.
8. After the message is printed, you may want to save the screen text to disk. To do this, hit the 'FG' keys and choose option 1, Save Screen to Disk. Enter a name for the screen text and it will be saved to disk.

W 2.3C EXAMPLE 3: ENTERING PRINTER SET UP AT PRINT TIME

This time let's go through an example in which you enter the printer setup by hand instead of reading it from disk.

1. If you have just loaded or restarted DOT WRITER, answer 'N' to the printer setup question.
2. Now load a letterset into memory. To do this, check that the flashing minus sign is present and hit the 'M' key.
3. Another menu will appear with a list of the DOT WRITER lettersets. Check that the disk with the DOT WRITER lettersets is in a drive and then choose number 1, OLDE ENGLISH. Note that if you create lettersets yourself, you can load them here by entering a filename instead of a number.

4. The Olde English letterset will be loaded from disk, and then the flashing minus sign will reappear. Now we must draw the screen window inside which we enter text. Hit the 'L' key.
5. After you hit the 'L' key, you will be asked three questions to establish the screen limits: spacing between letters, amount of magnification, and centering. For now just hit <ENTER> in response to each question.
6. The computer will draw a vertical line to mark off the screen window. Go to the Write mode as in example 2 above and type in a message, keeping to the left of the vertical line.
7. Now go to the Designate mode and hit the 'P' key as usual. This time, however, answer 'N' to the printer setup question. Next, enter the number of lines to be printed.
8. The next question will be, "DO YOU WANT SPACING BETWEEN LINES?". Answer YES by hitting <ENTER>. The only time you answer NO is if you are joining drawings together.
9. "OUTPUT TO PRINTER OR DISK?", is the next question. Answer 'P' or <ENTER> since you want the text printed. Sending output to disk will be discussed in a separate section.
10. "WANT TO REVERSE BLACK AND WHITE?", is the next question. This option is similar to "reverse video" except it works on paper instead of the screen. For now hit 'N' or <ENTER>.
11. Now you will be asked how much magnification you want. Hit <ENTER> for no magnification. Later you will want to try various amounts of magnification. When you do, be sure to set the proper screen limits with the 'L' command. When you choose some amount of magnification, you'll note that the EPSON prints somewhat slowly, with pauses of 5-10 seconds between lines.
13. "CENTER SCREEN WINDOW ON PAPER?" is the next question. Answer it as you choose.
14. "DO YOU WANT DOUBLE STRIKE?", is the next question. If you answer 'Y', the print will come out darker than if you answer 'N'.
15. Finally, you will be shown the name of the current letterset and asked if you want to save all your answers to the above questions, along with the name of the letterset, to a printer setup file. If you do, you won't have to bother entering this particular printer setup again, you can use the printer setup file as in examples 1 and 2 above. For now, though, answer NO by hitting any key but '1'.
16. If the printer is ready, hit <ENTER> and your text will be printed using the printer setup that you've chosen.

W 2.4 THE DOT WRITER 'READER' AND OUTPUT TO DISK

In example # 3 of the last section, we saw that you can send DOT WRITER's output to disk instead of printer. If you do send it to disk, how do you finally print it? That is a job for DOT WRITER 'READER' program.

The advantage of sending DOT WRITER's output to disk instead of printer, and then printing it with the READER program is that READER is faster to use. Simply bring up BASIC, type RUN"DOTREAD" <ENTER>, and when the printer is ready, enter the name of the disk file on which DOT WRITER's output is stored. The file is then printed on the MX-80.

The *disadvantage* of sending DOT WRITER's output to disk instead of printing it right away is that the output file uses a huge amount of disk space. *Every printer line requires about 1000 bytes of disk storage!*

For short 'Headers' or 'Logos', storing output on disk works well, but for longer text it's best to store the *screen* text on disk with the "FG" command, and print it as in example 1 of the previous section.

W 2.5 TYPES OF DISK FILES

GEAP and DOT WRITER use 4 different types of disk files: The first is the OUTPUT file that is created when you send DOT WRITER's output to disk instead of printer. The second is the TEXT file that is created when you save the screen text to disk with the 'FG' command. The third type is the PRINTER SETUP file that is created when you save the name of a letterset, and the formatting options for a particular printer setup And the fourth is the LETTERSET file in which the letters are stored.

We suggest that when you name a file, you include an extension to remind you what type of file it is. For example you could use the extensions /OUT for output files, /TXT for screen text files, /PSF for printer setup files, and /LET for letterset files. We use this convention and suggest you do the same.

Whatever you do, avoid giving the same name to two different files. It's a horrible feeling to spend several hours working on a new letterset and then kill it by giving another file the same name.

W 2.6 CREATING YOUR OWN LETTERSETS

Perhaps the DOT WRITER lettersets don't include the shapes you are looking for, or perhaps you would like to create some special symbols of your own such as mathematical symbols (integral signs, differentials, etc). Here are the steps in creating your own letterset or special symbol set.

1. Load DOT WRITER as in section W 2.2. Answer 'N' to the question about reading printer setup from disk.

2. When the flashing minus sign appears, press the 'A' key. This will allow you to define the dimensions of your letterset. The computer will first ask you to enter a width for your figures (1-128). The entire screen has a width of 128, but for lettersets, you will want to enter a smaller number. The standard Epson print was a width of 12, so for a first experiment, enter 12. The computer will then ask you for the number of printer lines for your figures (1-6). Enter 2 for now.
3. Next, the computer will draw a frame in the upper left corner using the dimensions you entered in step 2. In the event you picked the maximum 128 x 6, the entire screen is your frame an no borders will appear. You must construct your letterset inside this frame. (Note: the frame can be redrawn at any time with the 'F' command.)
4. Now draw the first letter. Make sure the flashing minus sign is inside the frame -- move it inside with the arrow keys if necessary -- and press the period key. A flashing dot will appear. You can draw on the screen with this dot by holding down the arrow keys and the Shift. You can erase by holding down the arrow keys alone. (In fact, you can use any of GEAP's graphics-editing and drawing commands to create letters. See the GEAP manual for descriptions of all the editing and drawing commands.)
5. When you have the letter drawn, go to the Designate mode by hitting the '-' key, and then hit the 'R' key to record the letter to the memory "workspace". The letter you drew will be blotted out as it is recorded and will reappear when the recording is finished.
6. Check how the letter looks when printed by the EPSON. Hit the 'W' (for Write) key. The computer will ask you if you are writing from screen or memory. Answer "memory" by hitting any key but '1'. (If you hadn't recorded the figure to memory in step 5, you could do so now by hitting the '1' key.) Next, the computer will ask if you want black and white reversed and if you want double strike. Answer these questions and the letter will be printed.
7. If you don't like the appearance of the letter you can redraw it and repeat the 'W' command.
8. When the letter is completed, save it to disk. While in the Designate mode, type "S". You will be asked if the save is from screen or memory. If you have tested the letter with the "W" command it will be in memory so you can respond with any key except "1". If the figure is only on the screen you can hit "1" but this is slower.
9. Next you will have to enter the symbol under which to save the letter or drawing. If it is a letter, save it under its keyboard counterpart. Otherwise, use any convention that you can remember.

10. Next you will be prompted for a *filename* for the creation. Enter the filename and the letter will be saved in its proper place in the file. In this fashion, you can create lettersets in small pieces. Also you can use the EDIT feature when you return to a letterset after a break and thereby reset the dimensions of the letterset without having to remember them.

A Few Additional Comments:

You can edit letters stored on disk. This editing can be done to our letters or your own creations. Simply hold the "T" and answer the prompts. When the desired letter is on the screen, you can redraw or edit it and then save it back to its position on the disk with the "S" command.

Use the "T" command in order to restore the dimensions of a letterset you are creating rather than trying to remember the dimensions each time. The "A" command is OK for the first session but after that use the ease of the "T" command to save time and errors.

Finally, you may wonder what would happen if you let your letter stray outside the frame. The answer to that is nothing! Only the area inside the frame is scanned by the program and anything outside is ignored.

2.7 WORKING WITH LARGE LETTERSETS

Since the TRS-80 has a limited amount of memory, some lettersets may prove to be too large to reside entirely in memory. In such a case, letters will have to be read from disk as needed.

It is also a possibility that a letterset could be so large that it won't fit on disk either. There are some system limits that you may have to confront. To calculate how much space a letter takes on disk, multiply its width (1-128) by the number of printer lines it takes (1-6). Therefore, if a letter or drawing is 128 by 6, it will take 768 bytes. The entire ASCII group, if created using 128 by 6 dimensions would take (768x95) 72960 bytes. That is too much. The Dot Writer files are limited to 32767 bytes.

It is a good idea to calculate the size of a letterset before you create it! Dot Writer stores letters in fixed positions on disk based on their dimensions and ASCII values. Positions are created on the disk for all ASCII values below and including the one you are assigning. If you create a "B" and store it, Dot Writer will also create space for "A" and everything else below "B". Positions above the "B" will not be created until they are needed. Note that the keyboard is not in ASCII order. The ! is the lowest value, followed by ", then # and they stay in order until $. After that they skip around so see the appendix for a complete list.

To help with the calculation of disk storage space required for any given set of characters, we have created the "H"elp command. When in Designate mode, with a letterset dimensioned, (ie. 128 by 6) the "H" key will print the disk storage requirements on the screen.

W 2.8 CREATING HIGH RESOLUTION GRAPHICS

You use the same DOT WRITER commands for creating drawings as you do for creating lettersets. The main difference is in the way you think about the task. With the lettersets you think in terms of storing each letter of the alphabet under the appropriate symbol. But, with large drawings you think in terms of the drawing being broken down into blocks with each block being stored under a different keyboard symbol. (Look at the example on the next page.)

Since you usually use blocks with larger dimensions than the dimensions of lettersets, you want to use keyboard symbols with low ASCII values when you store the blocks. Recall from section W 2.7, that the lowest valued ASCII symbols run across the top of your keyboard, from the '!' sign up to the '*' sign. (See Appendix B.)

If you do decide to make the dimensions of your blocks large, perhaps equal to the entire screen (128 by 6), you should read section W 2.7 for a discussion of memory and disk storage requirements. (Remember that 128 x 6 dimensions give you the entire screen and no borders are drawn.) If you use the full screen dimensions, you should be familiar with all of GEAP's editing and drawing commands so that you can draw large figures quickly.

You can also use the other GEAP expansion modules -- Quickcursor, Magnify/Rotate, the Lettersets -- to make your drawing. First load DOT WRITER as described in section W 2.2. Then call any of the expansion modules from the 'IO' or 'UO' menu as usual. When you've got the drawing on the screen, go to the 'UO' menu, and choose option 3 once again. Answer 'N' to the question of reading printer setup from disk. Your drawing will reappear on the screen. Use the 'A' command to enter the dimensions of your drawing (128 x 6 for full screen) and save the drawing under the appropriate keyboard symbol with the 'S' command.

When you have all of the blocks drawn and recorded under different keyboard symbols, you can print your drawing on the EPSON by loading the "building block" file by name using the 'M' command, going to GEAP's Write mode, typing in the symbols for your blocks in the order in which you want them joined on paper (see the example on the next page), and using the 'P' command. When you are asked about spacing between lines and between letters, be sure to choose "NO SPACING" so that the blocks will

join up properly.

Also, if you have printed part of the drawing with the 'P' command, and you want to print some more with, perhaps, different magnification, be sure to answer 'N' to the "cold start" question so the printing will take up where it left off.

EXAMPLE:

IF:

WAS STORED UNDER THE SYMBOL ! and

WAS STORED UNDER THE SYMBOL " and

WAS STORED UNDER THE SYMBOL # and

WAS STORED UNDER THE SYMBOL $

THEN:

! WOULD PRINT OUT AS  AND

WOULD PRINT OUT AS
$

Appendix A

GEAP Supplied Fonts

This appendix will show you how the supplied fonts look on the video display BEFORE they are transformed into bit-image graphics. This will give you an idea of how to go about designing your own lettersets. This same feature can be seen by using the edit function of Dot Writer and displaying the fonts on the screen.

Every supplied font is not shown here - just a few have been picked in order to show you how they look.

MBx2 MC SE OE/LC MP

That is all there is to it! Just create letters like these and you will be building your own special lettersets in no time!

Appendix B
Keyboard Character Order

When using GEAP Dot Writer, it is necessary to be aware of the order in which the keyboard characters are displayed. The lowest character is the SPACE at 32 decimal and the highest is the lowercase "z" at 122 decimal. There are additional values but they are not directly accessible from the keyboard so they are not of importance here.

When you set up a FRAME within which to set up a character or Hi-Res drawing, the computer will display the highest character that can be used to store the finished drawing in memory. The larger the frame is, the lower in value the largest storage location will be. This is a memory restriction - higher values can be stored on disk! Following is a list of the keyboard symbols in order from smallest to largest. The list includes the decimal value of each character:

VALUE	CHARACTER	VALUE	CHARACTER	VALUE	CHARACTER
32	SPACE	62	>	92	NA
33	!	63	?	93	NA
34	"	64	at sign	94	NA
35	#	65	A	95	NA
36	$	66	B	96	NA
37	%	67	C	97	a
38	&	68	D	98	b
39	'	69	E	99	c
40	(	70	F	100	d
41	)	71	G	101	e
42	*	72	H	102	f
43	+	73	I	103	g
44	,	74	J	104	h
45	-	75	K	105	i
46	.	76	L	106	j
47	/	77	M	107	k
48	0	78	N	108	l
49	1	79	O	109	m
50	2	80	P	110	n
51	3	81	Q	111	o
52	4	82	R	112	p
53	5	83	S	113	q
54	6	84	T	114	r
55	7	85	U	115	s
56	8	86	V	116	t
57	9	87	W	117	u
58	:	88	X	118	v
59	;	89	Y	119	w
60	<	90	Z	120	x
61	=	91	[	121	y
				122	z